

CDR: HCal Section

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HCal Meeting

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HCal Section to CDR

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- Combined pCDR material (minus some older studies) with test beam paper plus future plans

Tables

Parameter	Units	Value
Inner radius (envelope)	mm	1820
Outer radius (envelope)	mm	2685
Length (envelope)	mm	$2 \times 2175 = 4350$
Material		1006 magnet steel
Number of towers in azimuth ($\Delta\phi$)		64
Number of tiles per tower		5
Number of towers in pseudorapidity ($\Delta\eta$)		24
Number of electronic channels (towers)		$64 \times 24 = 1536$
Number of modules (azimuthal slices)		32
Number of towers per module		$2 \times 24 = 48$
Total number of absorber plates		$5 \times 64 = 320$
Tilt angle (relative to radius)	°	12
Scintillator thickness	mm	7
Gap thickness	mm	8.5
Sampling fraction at inner radius		0.037
Sampling fraction at outer radius		0.028

Table 5.4: Design parameters for the Outer Hadronic Calorimeter.

- Currently Excluded:
 - Module weight (900 kg both)
 - Absorber plate thickness at inner/outer radius
 - Size of tower at outer radius (132 both)

Need New Figures

- Updated drawings?

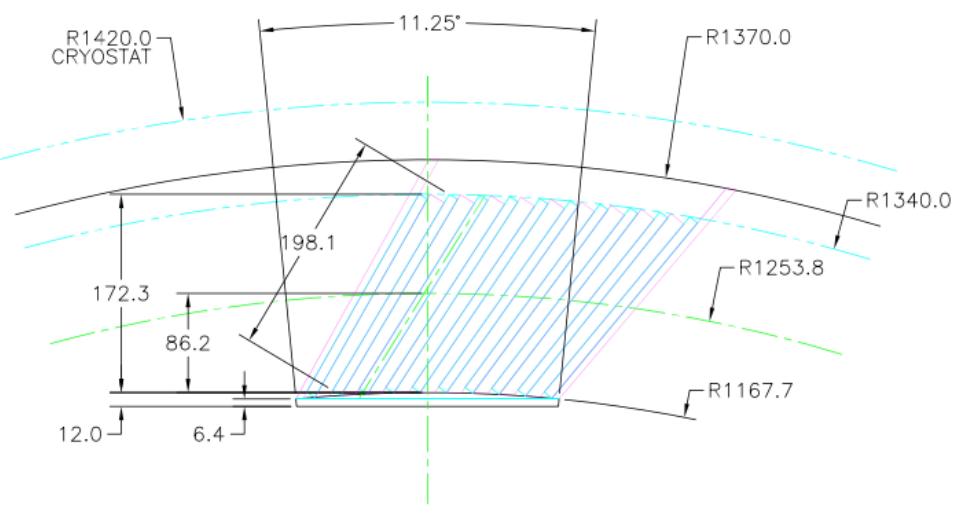


Figure 5.3: Transverse cut of an Inner HCal module, showing the tilted tapered absorber plates. Light collection and cabling is on the outer radius at the top of the drawing.

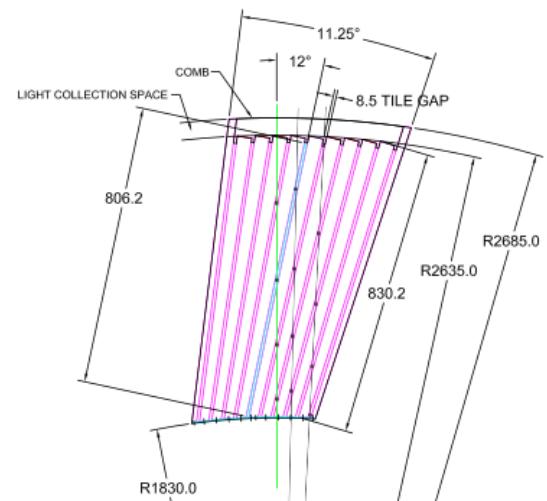


Figure 5.6: Transverse cut of an Outer HCal module, showing the tilted plates. Light collection and cabling is on the outer radius at the top of the drawing.

Section 5.6: Ongoing Developments

- Test Beam in 2018
 - Goals? Plans?
- Self Trigger
- LED System
- Tile Testing
 - Add photos from today

Summary

- Outline, new plots needed etc:
 - [https://wiki.bnl.gov/sPHENIX/index.php/
CDR draft HCal](https://wiki.bnl.gov/sPHENIX/index.php/CDR_draft_HCal)
- Comments and responses will be posted there as well
- Thanks for the feedback